

PROJECT NUMBER: 1752
PROJECT TITLE: Optical Spectroscopy of Tobacco and Smoke
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I. TANDEM MASS SPECTROMETER

- A. Objective: To establish a mass spectrometry center with state of the art capability in tandem, high resolution, and soft ionization mass spectrometry.
- B. Results: Paperwork has been completed and a purchase order processed for acquisition of the JEOL SX102/SX102 four sector tandem mass spectrometer. The vendor is in the process of constructing the instrument.
- C. Conclusions: The instrument should be installed and operational next summer.
- D. Plans: Instrument construction is the responsibility of JEOL. Activities continue with regard to preparation of laboratory facilities to house the new instrument and acquisition of chromatography accessories.

II. PYROLYSIS MS

- A. Objective: To characterize residues obtained from the ART reactor vessel.
- B. Results: Two samples designated as vessel wall material and basket material were analyzed by pyrolysis on the thermal chromatography - mass spectrometry (TC-MS) unit. Both samples were pyrolyzed in three temperature ranges (30°C to 130°C, 30°C to 250°C, and 30°C to 400°C). The gases evolved in each of these ranges were chromatographed on a DB-5, 0.25 micron phase, 30 meter column.
- C. Conclusions: Data review is in progress.
- D. Plans: A report on results will be prepared.

III. EGA ANALYSIS

- A. Objective: To examine interaction effects from cross baseweb materials.
- B. Results: Burley, Bright, and Oriental extracts have been examined on Burley base web under a nitrogen atmosphere and under a 7.5% oxygen in nitrogen atmosphere.

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- C. Conclusions: Pyrolysis and combustion for materials are now complete except for one sample. Temperature profiles are being plotted and data examined.
- D. Plans: A report on the study findings will be prepared.

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